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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/846,096	04/30/2001	Xiang Lu	476-1998	3967

7590 06/21/2004  
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EXAMINER

TRAN, DZUNG D

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 06/21/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/846,096

Applicant(s)

LU ET AL.

Examiner

Dzung D Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on amendment filed on 04/02/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-13,15 and 18-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-13,15 and 18-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Specification***

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claim 21 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 21 claims "software", which are computer programs (e.g. see Merriam-Webster's Collegiate Dictionary, 10<sup>th</sup> edition). Computer program are non-statutory as they are not "acts" being performed (see MPEP 2106).
3. Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 22 claims "a sequence of signals" which is non-statutory.
4. Claims 1, 3-13, 15 and 18-20 are rejected under 35 U.S.C. 112, 2<sup>nd</sup> paragraph as being ambiguous because it contains two statutory classes (means and method). See EX PARTE LYELL, 17 USPQ2d 1548 (bd PA & I.1990).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3-13, 15, and 18-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. US patent no. 6,233,072.

Regarding claims 1, 11-13, 19 and 23, Liu discloses a wavelength division multiplexed (col. 9, lines 6-8) optical network having nodes (106 of figures 4A, 4B, 4C) coupled by links (line 1, line 2,... line N), to enable wavelengths to be routed across the network, the nodes being arranged to carry out a restoration process to re-route one or more of the wavelengths (abstract, col. 4, lines 55-67), the restoration process having the steps of: after failure sending messages (col. 3, lines 42-46) between the nodes and controller to dynamically determine possible restoration routes (abstract, col. 4, lines 55-67), the LTE or node is capable of determining the facility type of channel failures (col. 3, lines 42-44) (i.e. in a fully distributed search process), and sending an alarm to the OCCS to reroute the failure of the line (col. 3, lines 44-46) (i.e. re-routing each wavelength along a chosen one of the possible restoration routes); said nodes being arranged to made the choice of restoration route on the basic of optical parameters of the possible restoration routes, said optical parameters having been collected by said messages sent between the nodes (col. 3, lines 33-46).

Regarding claims 3, 4, 6, 10, 18 and 20, Liu discloses the nodes being arranged to make the choice of restoration route on the basis of optical parameters of the

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remainder of the path for the given wavelength (e.g. the LTE capable of determining the facility type of channel failures and switch to a protect channel when a channel fail (col. 3, lines 33-46)).

Regarding claim 5, Liu further discloses that the nodes being arranged to switch traffic from one wavelength to a different wavelength, and the restoration process having the step of choosing a wavelength within that route (i.e. the LTE can switch to a protect channel when a channel fail (col. 3, lines 33-46)).

Regarding claims 7 and 9, Liu further discloses the nodes being arranged to include spare capacity for restoration (same as reserve bandwidth on the restoration routes) (see abstract).

Regarding claim 8, Liu further discloses LTE capable of determining the facility type of channel failures and switch to a protect channel when a channel fail (col. 3, lines 33-46) (same as to make a separate search for possible restoration paths) and sending an alarm to the OCCS to reroute the failure of the line (col. 3, lines 44-46) (i.e. re-routing each wavelength along a chosen one of the possible restoration routes).

Regarding claim 15, Liu further discloses the optical parameters comprising loss of light (inherently as loss of power) (col. 11, lines 1, 7).

Regarding claim 21, Liu further discloses the LTE processor 216, 218 (e.g. software that drive processor 216, 218) in the node that can obtain information about the system and carry out a restoration process (col. 9, lines 33-51).

Regarding claim 22, Liu further discloses the system transmitting the data signal (col. 5, lines 1-31).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 3-13, 15, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anand et al. Dynamic establishment of protection paths in WDM networks, IEEE 2000 in view of Croslin US patent no. 5,943,314.

Regarding claims 1, 11-13, 19 and 23, discloses a wavelength division multiplexed (abstract) optical network having nodes (node 1, node 2, node 3...node 7 of figure 1) coupled by links (figure 1), to enable wavelengths to be routed across the network, the nodes being arranged to carry out a restoration process to re-route one or more of the wavelengths (abstract, page 199), the restoration process having the steps of: after failure the node is dynamic establish a protection paths, that is, both the route and wavelength assigned to the protection path are allowed to change in a dynamic manner so as to accommodate new connection request (abstract, page 198). Anand differs from claims 1 and 11 of the invention in that Anand does not specific discloses the nodes being arranged to made the choice of restoration route on the basic of optical parameters of the possible restoration routes, said optical parameters having been collected by said messages sent between the nodes. However, Anand discloses a

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node including an optical wavelength router (see figure 1) that send messages to one another for establishing the alternate route when a failure occur (abstract, page 198). Furthermore, Croslin discloses a system for establishing a restoral route having nodes (figure 1A, elements A, B, C, D , E, F, G, H), when a failure is detected, a node is designated as the arbitrator node for building the restoral route and the nodes of the network send messages to one another to effect the establishing of a restoral route in a distributed and dynamic manner (abstract, col. 3, line 47 to col.6, line 9). Therefore, if it is not inherent, it would have been obvious to an artisan at the time of the invention was made to include the teaching of Croslin in the system of Anand in order to establish a restoral route dynamically, which need less time to establish a restoral route than the pre-planned restoral route (col. 1, line 46-52).

Regarding claims 3, 4, 6, 10, 18 and 20, Anand discloses each wavelength router nodes being arranged to make the choice of restoration route on the basis of optical parameters of the remainder of the path for the given wavelength (figure 1, page 199).

Regarding claim 5, Anand further discloses that the nodes being arranged to switch traffic from one wavelength to a different wavelength, and the restoration process having the step of choosing a wavelength within that route (figure 1, page 199).

Regarding claims 7 and 9, Anand further discloses the nodes being arranged to include spare capacity for restoration (same as reserve bandwidth on the restoration routes) (see abstract, figure 1, page 202).

Regarding claim 8, Anand further discloses wavelength router nodes being arranged to make a separate search for possible restoration paths for each wavelength to be restore (page202).

Regarding claim 15, Croslin further discloses the optical parameters comprising AIS (which is well known in the art for indicating the loss of power) (col. 10, lines 60-66).

Regarding claim 21, Croslin further discloses the node include a computer for controlling the processing of external commands and for switching of the transmission lines (e.g. software that drive computer) (col. 7, lines 1-9).

Regarding claim 22, Croslin further discloses the system transmitting the data signal (abstract, page 199).

### ***Response to Arguments***

9. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung Tran whose telephone number is (703) 305-0932.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jason Chan, can be reached on (703) 305-4729.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

*M. R. Sedighian*  
M.R. SEDIGHIAN  
Primary Examiner  
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